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ART. I. — *On the recent Introduction of the Waterloo Cæsarean Evergreen Cabbage into England as food for Cattle.* Communicated by J. E. TESCHEMACHER.

SIR, — In Loudon's Gardeners' Magazine for October, 1828, I find the followning short notice.

" *The Cow Cabbage.* — There is a plant of this valuable variety now coming into flower in the garden of a friend near this, from which I hope to obtain a fresh supply of seed in a few months, some of which I shall transmit to you for distribution, and the remainder I shall retain for those who may wish to apply to me for it.

W. HAMILTON.

In the number for February, 1829, is the following communication with an excellent wood cut.

" *Cow Cabbage.* I received a packet of seed of this extraordinary cabbage from a gentleman of Cirencester, who brought it from Jersey, and have sown it. In his garden I have seen fine healthy plants which weathered last winter in the open garden remarkably well, and seem to be equally hardy with their congeners."

It is much cultivated in Jersey, (England) and attains the height of from four feet to ten and twelve feet. The little farmers feed their cows with their leaves, plucking them from the stem as they grow, leaving a bunch or head at the top. The stems are very strong, and are used for roofing small out buildings; and after this purpose is answered they become dry and are used for fuel. When the gathering of the leaves is finished at the end of the year, the terminating bud or head is boiled, and is said to be particularly sweet.

I am particular in giving all the information I can collect on this subject because I had lost sight of it until recalled to my mind by the receipt of the following extraordinary and almost incredible notice amongst my last accounts from London.

Waterloo Evergreen Cæsarean Cow Cabbage.

"This singular and extraordinary species of cabbage, almost unknown in England until introduced by the persevering efforts of Mr Fullard, three years since, grows to the height of twelve feet, and from fifteen to twenty feet in circumference.

"Five of these stupendous cabbages now raised to the greatest perfection both of quality as well as size, have been found by proper management an ample allowance of food for *one hundred* sheep, or ten cows per day."

The nutrition supplied by this delicious vegetable, will speedily produce the most surprising improvement in the growth and utility of every description of cattle.

It is stated as an evidence of the beneficial tendency of feeding sheep on this cabbage, that they have been found to produce wool of a finest silken texture *twentyfive* inches long, a circumstance which, if generally realized, cannot fail to attract the utmost attention.

The celebrated agriculturist, Mr Coke of Holkam, England, is said to have pronounced the highest encomiums on this cabbage.

Mr Fullard, or his agent's advertisement of this new article, savors a little of puffery, unless, as he affirms, it is strictly the truth — and then, indeed, language can hardly say enough on its importance. The agent for the sale of the seed, the price of which is twenty shillings sterling (about $5) for a packet containing twenty seeds, is Mr Brown, No. 46 Cheapside, London, who says that in order to obviate scepticism, and to afford the highest satisfaction and confidence as to the perfect rectitude of this statement, agriculturists, graziers, and all who feel an interest in this species of produce, are requested to apply to him as above, where he will exhibit specimens of the cabbage and also of the wool taken from the sheep fed with it. The packets of course contain the requisite directions for its successful cultivation, and the seed is stated *never* to fail. The names of the King, the Duke of Wellington, and a host of others are given as having purchased the seed to make the experiment.

In the climate of England it seems to be a perfectly hardy evergreen, that is, to retain its leaves during the winter. If such should be the

case here, it would be an invaluable winter food for cattle, as its height of nine to twelve feet would keep it above the snow, and render it approachable — of this, however, I fear we can hardly flatter ourselves.

With the same notice is another as follows, which I give as I received, being very desirous that everything new, particularly when useful, should be introduced here without delay.

"Mr Fullard has also supplied Mr Brown, No. 46 Cheapside, with a portion of the original and most perfect quality of the *Zealand Melon Golden Swede Turnip seed.*

"This species of turnip, as attainable by Mr Fullard's seed only, will be found the most delicious and useful of any ever introduced into the country. This, produced in such great perfection, is yet comparatively little known in England, but its value over all others is immense, and the proprietor of this seed can, therefore, with pleasure and confidence guarantee to every farmer and grazier the utmost satisfaction with a single trial.

"Seed wheat and oats truly singular and extraordinary in their nature and utility, of Mr Fullard's cultivation, may also be purchased as above."

I wish to be clearly understood that I have nothing whatever to do with any of the parties concerned in the sale of this produce, that I give the information as I received it; but that I should not have sent it to you for publication if I did not myself think that credit might be attached to the statement.

Remarks by the Conductor. We have heretofore published in the New England Farmer, notices of this Cow Cabbage, which seems revived and coming forward under new auspices. In the N. E. Farmer, vol. viii. page 326, are published the articles given above from Loudon's Magazine for October, 1828, and for February, 1829, together with a cut representing the gigantic vegetable in full growth. In page 342 of the some volume of the N. E. Farmer, is a communication from Dr Thacher of Plymouth, Mass., a gentleman whose zeal, industry, and talents have given him a high standing in the scientific world. In this article Dr Thacher mentions having received a parcel of the seeds of the Cow Cabbage, recently imported from France, from Dr James Mease, of Philadelphia. Dr Thacher observed that "the plants in this town (Plymouth), the last summer, [1829] from the seeds sent by Dr Mease, discovered a very rapid

growth, and attained the height of from four to five feet before checked by the frost. Little care was taken of them, and all that were exposed without defence were killed by the winter frost, though they yielded not till near the close of winter. Fortunately one of my neighbors, from a curiosity to ascertain their worth, took up his plants in autumn and put them into his cellar. They flourished well, and he cut the leaves and young sprouts several times in the winter, and found them excellent for table greens. Vegetation in the plants was not checked while in the cellar, and in April he transplanted them into his garden, where they have flourished luxuriantly, throwing out new sprouts in great abundance, which he cut several times. *One of the plants is now six feet high*, and its sprouts to the very summit, are covered with yellow blossoms from which a large quantity of seed will be produced. This plant appears to be endowed with surprising prolific powers, and from the experiment just related, our farmers have ample encouragement to cultivate this article," &c. All this is well, but in an article published in N. E. Farmer, vol. xiii. p. 14, dated July 18th, 1834, Dr Thacher stated as follows. "It is not a very pleasant duty to comply with your request in the last Farmer respecting the Cow Cabbage concern. I have merely to say that the plant has proved to be a worthless article. I distributed a very considerable quantity of the seed produced the first year, and I believe in every instance in New England it degenerated to such a degree as to disappoint expectation, and its cultivation was relinquished. But the letter which I published on the subject gained for me quite a flattering *notoriety*. It was noticed in various parts of the United States, and I soon found myself involved in an extensive correspondence which I believe however was productive of little profit to either party. Some of the letters came post paid, others not. When I sent seed to the western and southern states, I requested to be informed of the result of the trials in those climates, but they disappointed me in every instance. The last letter which I received came to me at twentyfive cents postage, the writer stated that he had seated himself on a new plantation, and having heard much in favor of Cow Cabbage for winter fodder, he would be glad if the Doctor would send him some seed for trial, but it might be sent part of the distance by water and he would pay the expense. Upon the whole, Mr Editor, the Cow Cabbage concern has been one of my poorest speculations."

It is possible, however, that the correct cultivation of the Cow

Cabbage may not be understood in this country, and methods may be adopted, which may cause it to realize expectations. With that hope, we should be glad to hear further from Mr Teschemacher, or any other person who is acquainted with the habits and culture of this plant, and believes that it may be rendered useful in our soil and climate.

ART. II.—*Sketch of a Botanical Excursion by Robert Dwight, Esq. in the neighborhood of Courtallam, and in the adjacent mountains.* Communicated in a letter to Dr Greville from Sir W. Jackson.

COURTALLAM, or Kootallum, as it is usually pronounced, is a very inconsiderblae village, situated in N. lat. 9°, and E. lon. 77°, 26′, near the foot of the range of mountains which traverses the peninsula of India, from north to south. At this part the range seems to retire towards the west, forming, as it were, a small recess surrounded on three sides by hills, which near Courtallam undergo a considerable diminution in their height, and are besides divided by a deep but narrow pass, leading directly across to the Malabar coast. Owing to this break, and diminution in height, part of the western monsoon passes over in the form of thick clouds, frequent showers of rain, and very strong westerly winds. The united influence of these causes reduces the temperature of this spot from 10 to 15 degrees below that of the surrounding country. This of itself would be sufficient to attract visitors during the hot months of June, July, and August; but there are other inducements of a not less enticing description. There, all is green and lively, when the plain below is burnt up, and scarcely a blade of grass to be seen; the scenery is rich and varied, and enlivened by a series of beautiful cascades, the fall of the lowest of which, though two hundred feet in height, is so broken in the descent as to be a favorite bathing place, where the visitors enjoy a shower bath on the most magnificent scale. The surrounding scenery is, I think, the richest I have anywhere seen in India. You are aware that I am no painter; you must not therefore be disappointed if I fail in presenting to your mind's eye such a landscape as now offers itself to mine. I shall, however, with the aid of

geology, make the attempt. The hills are all trap, presenting the characteristic features of that class of rocks, such as sharp broken ridges, high peaks, and nearly perpendicular sides, traversed by deep ravines and chasms, down which the mountain streams tumble with noisy impetuosity. The shelving and less steep flanks of these hills are covered with a loose red and very fertile soil, formed partly of decayed vegetable matter. These shelves and slopes are densely clothed with a vegetation highly varied, and of truly tropical luxuriance, the whole presenting to the view a mixture of delicate verdure, dark forests, and black, almost perpendicular naked cliffs, forming together a rare combination of beauty and grandeur. The narrow glen, along which the principal stream pursues its rapid course, looks almost as if excavated from the solid rocks, as its sides at some places are close to the water's edge and nearly perpendicular ; at others, however, they open into small amphitheatres covered with deep and very fertile soil. On these favored spots are cultivated some of the most esteemed vegetable products of the East, such as Cinnamon, Nutmegs, Coffee, &c. ; the two last are of excellent quality and in considerable quantity. The woods on either side which shelter these gardens are generally composed of fine large trees, mixed with smaller ones, bound together by a profusion of twining shrubs. Under the shade grow a variety of Satamineæ, among which Cardamons, Arrow Root, Ginger and Tumeric may be mentioned, several species of Pepper, and three or four of Peperomia ; some curious Urticeous a species of Dorstenia, four or five Bignonias, that very curious plant Bragantia (or Trimereza), many Orchideæ, Asphodeleæ, Aroideæ, and of Ferns in great profusion. Among the trees I found several Annonaceæ, a large arboreous Phoberos, several arborescent Leguminosæ, a number of Rubiaceæ, one of the most interesting of which I considered the Morinda umbellata, climbing as it does to the tops of the highest trees. Two species of Myriotica (nutmeg) I was enabled to distinguish by the mace only, the trees being so large that I could not obtain specimens. Menispermaceæ abound. Here I saw for the first time, Cocculus macrocarpus, a powerful twiner. The stems and larger branches are at this season covered with loads of fruit, hanging in large clusters, vieing in size with grapes, and most enticing to look at, being covered with a fine white bloom. I also found what appears to me a new species of Clypea, the male plant only ; the flowers are collected into flat dense heads, somewhat resembling a Dorstenia, hence the temporary name I have given it,

until the discovery of the female flowers shall determine whether it is new or not. I have no room to say more concerning the inexhaustible treasures of this matchless glen, for if I do, I fear there will be little space left for an account of the excursion to Botany Peak, the main object of my letter, and were I to fill three other sheets in expatiating on its Flora, I should still fall short in adequately portraying its merits as a botanical garden, for such I consider its most appropriate designation. The hill occupying the southeast point of the recess of Courtallum is the loftiest of this part of the range, the highest peak of which my companions humorously designated, in honor of the collections of the day, Botany Peak. It is distant about three miles from the houses of the Europeans. About 6 A. M. we left home, and rode to the foot of it; at 7 we commenced the ascent, carrying a barometer, provisions for the day, two large botanical boxes and sundry quires of paper. The Europeans, three in number, were armed with double barrelled fowling-pieces, loaded with ball in case of accidents, as it was rumored that there was an elephant in the way. This we did not believe, but we were afterwards convinced of the truth of this report by seeing his foot marks, though not the animal himself. About 9 we arrived on the bank of a small stream, half way up, and this being the only one we had to cross in the ascent, we stopped and breakfasted. There I found several plants new to me, and saw growing, for the first time, the Rhus decipiens. It is a tall handsome tree: one I measured was nearly forty feet long; it had been blown down, but not so as to stop its growth, and was not at this time in flower. The Plantain was also growing wild, along with a species of Maranta, (arrow root.) I likewise found a Labiate plant, apparently of the genus Lamium. A few other plants were found at this place, and added to the considerable number gathered in the previous ascent. Having refreshed and rested ourselves, we pushed on with all possible speed, to leave ourselves more time to accomplish the steeper and more difficult part of the ascent which was still before us. For nearly a quarter of a mile from the stream we passed over a piece of cleared land, where some of the common Cerealia are cultivated and which at this time was covered with Paspalum frumentaceum, among which I found two species of Torenia, T. asiatica, and another very handsome, large flowered species; also a magnificent Lobelia, apparently intermediate between L. nicotianafolia, and L. excelsa, but not in a good state for preservation. On leaving this green spot we entered a deep and dark wood, forming a

belt of uncertain length, but nearly a mile in breadth, composed of a great variety of stately trees, mixed with many smaller ones and under shrubs of every description. Among the herbaceous plants growing under the shade, is the Cardamon and several other species of Scitameneæ, a great variety of Arums, some of them very handsome, two or three species of Didymocarpeæ, and many highly curious Orchideæ, one of which grows like a moss on the moist rocks, a shrubby Chloranthus in great abundance, and several Ferns. The trees I am not so well prepared to specify, as they were difficult to get at, and required more time than could be spared; but I obtained specimens of one or two Annonaceæ, and a variety of shrubby as well as herbaceous Rubraceæ. I picked up one or two of the fruit of a very large Nutmeg tree, much resembling (in fruit) the aromatic nutmegs, both in size and in the kind of mace which covers the fruit. To have got specimens of the tree, we must have cut it down, which would have been a week's work.

I protracted my stay in this forest to the utmost, both in ascending and descending, and then left it with regret, wishing that I could have devoted a month to the examination of the plants growing on this spot, and satisfied that I should still have left much for future investigators. On quitting the forest the hill became very steep and so thickly covered with bamboos, that we had the greatest difficulty in making our way through them, though much more pliable and innocuous than those of the plain. About 12 we reached the first halting place, familiarly known by the name of Hatfield's Peak, from a gentleman of that name who had formerly visited it. Here we rested, set up the barometer which indicated a height of about 3600 feet above the sea, and made some rough trigonometrical experiments to determine the heights of neighboring peaks. In the mean time I oocupied myself in examining the Flora, and was so fortunate as to add a few good plants to my collections, among the most interesting of which was one agreeing in habit with Crassula, but differing in flower; a Euphorbiaceous shrub, apparently a new genus; a most beautiful Phillyrea, but not in fruit; and an Acacia, certainly new to me, but neither in flower nor fruit. At this height we met with many young plants of Caryota urens, but none of considerable size, which surprised me. Here the Bentinckia abounds, setting at defiance the almost hurricane blasts that sweep the hills at this season, rising above all the plants by which it is surrounded, and producing and ripening its panicles of shining black, desirable looking, but most austere

berries, in as great profusion as in the most sheltered valley. The Euphorbiaceous plant is characterized by a large five-parted calyx, five minute petals, attached to the inner edge of a large cup-shaped torus. Male flowers; stamens five, the filaments embracing a sterile three-cleft style. Female flowers; stamens none, styles three, the stigmas two-cleft, ovary closely embraced at the base by the torus, three-celled, with two pendulous ovules in each, without the interposition of a carunculus as in Savia. It is a small shrub with alternate leaves and flowers on a rather long thick peduncle, like those of Erythroxylon. Should an examination of the fruit prove this to be a new genus, I propose calling it Macrochnia, on account of its peculiar torus.

On the most exposed part of the narrow ridge leading to Hatfield's Park, we came on the lave of a wild hog. It resembled a hay stack in miniature, made up of tufts of grass heaped one above another, and apparently brought from some distance, as there was no marks of the grass being dug round the place. These tufts were so nicely adjusted as to bid defiance to the wind which for months at this season, blew almost a hurricane at this place. It was not, however, proof against the ruthless hands of man, for it was speedily broken into in search of pigs; but none were found.

Leaving two of my collectors under the shelter of some bushes, to transfer the plants collected from the boxes to paper, we pushed on to our final destination, the highest point of the mountain, which we reached a little after one o'clock, and ascertained the elevation by barometrical measurement to be four thousand three hundred and fifty feet above the level of the sea. This was by far the most difficult part of the ascent, on account of its steepness, the broken character of the ground, and the closeness of the bamboos. We found ourselves enveloped in clouds and mist, though there was a bright sun shining below. The thermometer fell from 75 degrees, the usual height on the plain, to 60; the barometer to 25,800. The few trees that are scattered about here, are stunted in their growth, and enveloped in a thick coat of lichens. Had time permitted, and locomotion been easier, I should have tried to ascertain what they were; but the bamboos were so thick that we were obliged to cut our way and clear a spot in order to set up the barometer. The bamboos had undergone a similar change to the trees, for in place of fine tall tapering plants, not unlike clumsy fishing rods, they had acquired the appearance and name of reeds. A species of Oxalis is very abundant

among them, but whether an alpine variety of O. sensitiva or a distinct species remains yet to be determined. It differs greatly in habit in having a long branched stem, each branch being terminated by a tuft of leaves and flowers, like those of O. sensitiva, but it is less sensitive, which may be owing to the lower temperature of its place of growth. The bamboo among which it grows is peculiar, and so far as I have been able to discover a nondescript species, which, however, I cannot adequately describe, for want of the parts of fructification. It is a tall, straight, nearly branchless, reed-like plant, attaining in sheltered situations, a height of between twenty and thirty feet, with a slender, smooth, hollow stem, very firm and ligneous below; the leaves lanceolate, sheathing, confined to the extremities of the shoots, and furnished with a short but distinct petiole; in size these leaves greatly exceed those of all the other bamboos I have seen in this country, the larger ones being from eight to ten inches long and from two to three broad, tapering at both ends. Altogether they are so like those used by the Chinese in packing tea, except in being less coriaceous, that I am inclined to consider our plant, if not essential, a very nearly allied species, perhaps variety, the difference depending on situation.

Having at length accomplished the main object of our journey, we commenced the descent; the first part of which was performed as rapidly as the close growth of the bamboo, or reeds, as they are usually called, and the broken nature of the ground would permit. Although much Botanizing was out of the question, I got a few plants which I had overlooked in the ascent; but on re-entering the forest I took the liberty of dropping behind my companions, who were not botanists, and enjoyed such an hour's herborizing as rarely falls to the lot of even the most enthusiastic individuals; to the dismay, however, of my friends, who at length fancying that I had lost my way, or been attacked by wild beasts, or a score of other things equally near the truth, set up such a shouting as to leave me no alternative but to rejoin them, which I did with great regret; I had, however, again filled my boxes and formed a large parcel besides. I could not but lament my inability to spend several days in that noble forest, not at one season, but at every season in the year, if the climate would permit it. To go there for one day only is extremely tantalizing, as one is lost and perplexed by the endless variety of forms at once presented to the eye. From the time of our leaving the wood the descent was so very rapid, that we had all remounted

our horses before five o'clock, and in a little more than half an hour we were enjoying ourselves in a shower bath. I must now endeavor to give you some idea of the richness of the Flora of these hills, deduced from the observations of this excursion only, as it would take too much time to go over my herbarium to arrive at a more satisfactory result. My visit to Courtallam was a professional one, and extended to eight days only, those of my arrival and departure included. In that time I made five excursions, none exceeding one fourth of the distance of that which I have above described, and returned to Palamcottah with species belonging to about eighty Natural Orders, exclusive of about fifty species still undetermined, and of a great number of plants lost in the drying from having run short of paper. The number of species of which I have actually specimens, considerably exceeds three hundred; I cannot say how many were lost. Besides these, no specimens were gathered of a large proportion of high trees, which we had time neither to cut down nor climb; but several of them were ascertained from the fallen fruit to be new. The more common plants, of which I had already specimens, or could easily obtain at any other time, were altogether rejected, making a total of probably not fewer than five hundred species seen in flower or fruit in the short space of five days, and at a rather unfavorable season of the year. These numbers afford data, from which I think we may safely infer, that a very small portion of these hills, say twenty miles square, possesses a Flora of probably little short of fifteen hundred species of vascular plants, including Ferns in the wider sense of the term; and if the field be extended to the higher hills to the north and south-west, I have no doubt that five hundred more may be added. I say five hundred, for the hills alluded to rise more than fifteen hundred feet above the one we ascended; a height at which an almost new Flora presents itself. If there is any truth in this calculation, it follows that on this mere speck of ground, there is a Flora exceeding the phænogamous Flora of the whole British Islands, and nearly equalling in amount the number of species described in Roxburgh's Flora Indica. Surely if ever a country deserved the scrutinizing search of an able and diligent Botanist, it is this; so satisfied am I on this point, that I have now three native collectors employed here. It is true I do not expect much from their exertions, as natives are always timid explorers of the jungle, unless led by a European, when they will cheerfully follow; but as the field in itself is one of the richest I know, I send

them to it, as one from which I have the best chance of procuring valuable additions to my already extensive collections, and one which my other occupations do not permit me to investigate by my own exertions. As this letter greatly exceeds its anticipated limits, I must conclude with the hope that my unfavorable expectations respecting the success of my collectors, may not be realized.

SEPT. 4, 1835.

P. S. There being no ships about to sail when I finished the preceding communication, I kept it open in case anything additional should occur to be added. And it so happened that my services being required a second time at Courtallam, I availed myself of the opportunity to make several excursions, by which I have nearly doubled my collections, and added a great many new plants. Among them may be mentioned several Annonaceæ, five or six handsome Balsams, one so very curious and distinct that I propose to constitute it a new genus, under some such name as Koryanthus, in allusion to the helmet formed by the two upper sepals. Two or three very remarkable Melastomaceæ will form, I believe, a novel and very distinct genus. I have also a very fine new Ceropegia; two undescribed species of Didymocarpeæ, one of them, I think, constituting a distinct genus, allied to the Wulfenia of Wallech's *Tent. Fl. Nepal.;* a great variety of Orchideæ; a number of Aroideæ, among which is an enormous Pothos, and two or three genera quite new to me. Of the Bamboos, I found flowering specimens, but not in a good state, and several Carices which I have not seen before; and lastly, a very curious species of Phallus decorated with a wide loosely pendulous net hanging from the inside of the hood, reaching to the ground and covering the stem like a veil, (P. Dæmonum) *Hook. Bot. of Beech. Voy. vol.* 1, *p.* 78, 120. The result of this second excursion more than confirms my previous calculation of the riches of these hills, in distinct vegetable forms.

I am now disposed to think that two thousand species may be found within the limits assigned above to fifteen hundred. I have come to this conclusion from having extended my excursion on one occasion to a more distant part of the hills, and found many more new plants than on any former day. Hitherto I had explored only the northern slopes; but on this last occasion I examined the southern side, and certainly paid for my temerity by having to stay in the jungle all night, having gone too far and lost my way in returning home. I

was, however, well repaid for my privations by an unusually large harvest of good things. The hills here are not like those of Clova, for you can rarely see a hundred yards before you, on account of jungle. I have re-examined the Macroclinia and suspect that it is too closely allied to Savia to be separated; differing only in having the filaments united into a tube the whole length of the styles, and in the want of the fleshy mass to which in Savia the ovules are attached.

Art. III.—*On the Discrimination of Soils.*

There is no subject which can occupy the attention of the gardener which ought to be considered of greater importance than the due discrimination of soils; and yet there are few that have been treated of so vaguely. The press teems with periodicals, and we have regular and accredited works upon horticultural subjects; nevertheless, let us read what we may, we find little else than indeterminate terms and general directions. The consequence is, that if a regular and practised gardener, or an amateur, attempt to cultivate a plant with which he is wholly unacquainted, he but too frequently finds himself disappointed in the results which he has anticipated. He reads of loams, peat, bog earth, sand, manures, &c. and he follows the directions that are given, but his plants sicken, the leaves, perhaps, turn yellow, and he can obtain no blossoms. He consults the Encyclopedias and scientific catalogues, and compares the recorded periods of bloom, the size of the plants, and their general habit and character, with the specimen before him, and perceives nothing in common that can raise his hopes. He makes some alteration, chiefly in the temperature of his climate, the volume of air admitted, and the quantity of water, but his plants do not thrive, and vexation succeeds his pleasurable anticipations; and how pleasurable these are, none can tell but those who are gifted with an ardent love of plants, and feel, too sensibly, that "hope deferred maketh the heart sick."

The cultivator in the immediate vicinity of the metropolis knows, or did know, what the nursery terms loam and bog earth imply. We, among others, are perfectly aware that by the former term was not

meant the soil of a garden or field, but that peculiar pale, yellowish, or amber-colored soil, which nurserymen purchase at sufficiently high terms, about the neighborhood of Hampstead, — a soil which would suit nearly every species and variety of stove or greenhouse exotics, either alone or blended with certain proportions of "bog earth."

Now this loam, as far as our recollection serves us, was soft or unctuous in texture, not gritty, capable of some adhesion of particles, yet so light, that if a portion in a medium moist condition was pressed in the hand, it would become a mass; yet if suffered to fall from the height of two or three feet upon a hard surface, would crumble and fall apart. There are few gardeners, remote from London, who can obtain such a choice material; and if indeed, any person possess what he believes to be a light rich loam, he may be disappointed in its application. It is in inquiries concerning the nature of soils, that chemistry can afford an efficient aid; and, therefore, we would recommend every gardener to cultivate it to an extent that may enable him to analyse his loam so far as to be able to determine its chief constituents. To do this, he will require a bottle of good muriatic acid, (spirit of salt as it used to be called); another of sulphuric acid, which ought to be diluted with three times its weight in rain water; and a third of solution of potassa; that is, a liquor produced by dissolving one ounce of salt of tartar in two or three ounces of rain water. Two drachms, by weight, of any soil, dried on the stock or hob of a sitting room grate, and powdered in a mortar, may be tested by adding two drachms of muriatic acid, mixed with an equal quantity of pure water. If any sensible effervescence, or hissing arise, the earth contains chalk or limestone; and, after standing together four or five hours, the liquor may be strained through blotting paper, washed till sweet, and then dried in the same heat of the grate. The loss of weight will prove the quantity of chalk naturally existing in the soil. In 120 grains, from five to ten grains may be found; and to that extent it will prove useful, as it tends to add firmness of texture and moderate adhesiveness. Beyond ten grains in 120, it might not be applicable to many greenhouse and stove exotics.

After the abstraction of the chalk, and of the remaining acid, by the frequent washing with soft water, the soil must be again dried and weighed, and four times its weight of the diluted sulphuric acid added. The whole must then be boiled in a glass vessel for one hour. The boiling can frequently be effected in a short phial of thin glass, or a Florence flask, placed upon the cheek of a common fire-grate,

first at a distance from the fire. A small piece of paper should be put under the phial; and, as the liquor becomes hot, the vessel may be safely made to approach the fire till the heat is found sufficient to create ebullitions. When that is perceived, the boiling should be maintained for one complete hour.

The sulphuric acid will take up iron from the soil, and also the alumen, or pure clay which it may contain. The iron would be abstracted without heat; but the aid of boiling is required to effect the solution of the alumen.

When the liquid has become cold, the contents of the phial are to be poured upon a paper filter, previously weighed, and every grain remaining in the vessel must be carefully washed out by repeated rinsings of pure water, all the washings being poured into the filter. More water is to be added till the drainings come away free from acid taste, after which, the filter and its contents are to be dried, first by absorption on a piece of chalk, and finally on the grate or other hot surface, till they become completely dry. Being then weighed, and the weight of the paper substracted, the net product will be the amount of iron and alumen.

A good loam will lose, perhaps, ten grains out of the one hundred and ten, which we will suppose to have been the weight of the soil submitted to the test of sulphuric acid; and of these, four will be iron, and the remaining six alumen or pure clay. The substance upon the filter may weigh from ninety-four to one hundred grains, or nearly so; it will consist chiefly of siliceous or flinty earth.

The proportions adduced approximate to the results of actual experiments; and we know that the loam so tested was most admirable. Some latitude must be permitted, and some soils may contain some few grains more or less, of iron, chalk, and clay. But as a general rule in analysis it may be stated, first, that in one hundred and twenty grains of a rich light loam, from ninety to one hundred ought to consist of flinty insoluble earth; second, that the soluble portion ought to contain from six to ten grains of clay, and perhaps nearly as much chalk and iron. The later ingredient varies much in soils of different color. Those of the gryaish brown, or umber tint, appear to be the best, the iron being in that peculiar state of chemical oxidation which is most propitious to the health of plants. If a loam be very deficient in chalk, or the matter of pure clay, — as the well conducted experiments of analysis will demonstrate, — the chemical horticulturist can amend it. Caution and precision, both of which will be attainded by practice, will be of course required; but if a soil

be found so deficient in clay that one hundred and twenty grains contain but two grains, discoverable by the test of sulphuric acid, it will be very easy to add three, four, or five grains of clay, dried and reduced to fine powder; or of pipe clay two, three, or four grains; the same may be said of chalk. If, on the contrary, a soil be found to consist chiefly of coarse gravelly sand, it will not be difficult to separate a portion of that predominant quality by washing off some of the soil, and adding those fine separable matters to the bulk. Thus one third of a barrow of harsh soil should be washed in two or three waters; the matters that float, or rather that are not deposited within the period of a second or two of time in water being poured over the remaining two thirds, and the whole intermixed as the water of lixiciation dries off. Thus the heavy sharp sand of one third would be abstracted, and the mass become proportionably ameliorated. A young active chemist, alive to the charms of horticulture, could effect wonders with his soils. We, of course, speak of those intended for pot culture, wherein a barrow, with the aid of vegetable soils, &c. goes a great way.

The quantity of vegetable matter which exists in any soil may be pretty accurately determined by burning; that is, by keeping a known weight of it at a red heat, till it retain no blackness upon becoming cold. Vegetable matter is essential to the fertility of the soil; and, therefore, if a loam which is found to contain the staple earths above mentioned in fair proportion, and is of a free working texture, be very deficient in decomposable matter, it must be enriched by leaf mould, decayed vegetable mould, or completely reduced manure.

The best substitute for a perfect natural loam, is the reduced grass turf of a meadow or common. Vegetable matters, it is probable, are resolvable by decay in earth very similar in quality to that upon which they grow; and when short grass turf is cut into thin layers, it will in a short time become a fine mould. The turf, not thicker at first than an inch and a half, should be piled in a heap, the grass face downward, and be kept so two or three months. They should then be chopped to pieces, turned, and thoroughly incorporated; and these processes are to be repeated, at intervals, till the whole become a mass, replete with tender vegetable fibres. Such a soil, at the end of a year, will form a valuable substitute for good native loam, and be available for every purpose of the gardener. A stock ought to be prepared every year.

We will now dismiss the subject of loam, hoping that a certain degree of experience will teach the horticulturist the real value of chemistry. He, by the aid of a few books, and a little patient assiduity, will acquire a tact; and his pleasure be much enhanced by the confidence his mind will acquire. None but the ignorant scoff at knowledge; the enlightened mind feels indeed, and is sensible of its own imperfections; but it possesses that which no one can have any conception of but he who has it.

Sand is another substance of the components and qualities of which most are entirely ignorant; as, however, the cultivator of exotics in pots requires only a few sorts of sand to enable him to strike cuttings and to give openness of texture to his soils and composts, we shall mention but two species; *the first* is that fine, pure, siliceous substance termed *silver, or writing sand;* some of this ought always to be at hand; and where pit sand only can be obtained, we recommend that it be washed repeatedly till it cease to yield any considerable quantity of light earthy matter to water. That clear heavy substance which precipitates in a second or two, leaving the water void of color, is sharp enough for the purposes of striking cuttings, and blending with loam and vegetable earth.

The *second sort* of useful sand, is the drift of a road, that has been carried down by rain; this is next in value to river sand, and may be procured readily where that is wholly unobtainable.

In some districts these coarse sands are compound in their nature; they may contain lime, alumen, and iron, but in a state of chemical union which renders them nearly insoluble. In gravelly districts, road and river sand are the reduced, washed fragments of abraded gravel stones; they consist chiefly of flint colored with iron. In countries where limestone abounds, the grit contains that substance, and will effervesce with acids.

Both these sands are of great utility, because they give lightness and freedom to the loamy composts that are used in the culture of plants in pots.

Heath Soil. This substance is of primary importance; it is the earth which is found at the surface of commons or wastes, where heath grows naturally. It is the peculiar soil of these plants to which the distinctive title "American" is applied. Thirty years ago the nurserymen in the neighborhood of London called it by the name of *bog-earth*, and this title, though erroneous, was at least definite and understood; of late years, however, it has been fashionable to adopt

the term peat and peat-earth; they are not only indefinite, but utterly vague and inappropriate. Peat, strictly speaking, is the black decayed vegetable matter dug out of bogs or tubaries; it is to most plants inert and useless; but to a few it affords an aliment of great power; we may mention as examples *Thunbergia* and *Amaryllides;* not however, to dwell upon a subject which is now irrelevant, we shall only observe that, by the term *peat*, writers of the day mean to express heath-soil, the bog-earth of the last century; hence we read of sandy peat, turfy peat, black peat, &c. All these terms are applicable only to heath-mould, and they express the varying texture of that material, which certainly admits of much variation in the proportions of its ingredients. The sandy heath soil of Bagshot is of a greyish black tint, it contains a very great proportion of pure white sand, with perhaps scarcely one tenth part of black, decayed vegetable matter. The best heath soil contains much fibrous matter, and is either black or of a brownish hue, which depends upon the peculiar nature of the vegetable matter. All these soils abound with pure white sand, hence the peculiar applicability to plants whose roots are very fibrous, tender and delicate. Heath mould and loam in different proportions are the staple soils of the gardener, and with them he can effect almost every species of culture.

Peat, pure peat, or the earth of turf bogs, contains very little sand; it is a heavy, dead soil, forming, when burnt, a rich manure for cold inert land; but in most instances it is adverse to the gardener.

We earnestly advise our horticultural readers to desist from the use of the term *peat*, unless they really mean to express the substance dug out of bogs and peat-mosses, and whenever this may be the case, to style it *pure peat.*

When the soil of heaths is understood, we recommend the invariable adoption of the term *heath mould*, and to qualify it by adding the descriptive words sandy, turfy, or the like, as occasion may dictate.

We shall close our remarks by referring to another vague and unsatisfactory title which is given to an earth of a still more compound nature than any we have hitherto noticed. In descriptive catalogues and horticultural periodicals, we continually meet with the word *rich mould.* Now, we ask, what can any one understand by the terms, for nothing can be more general and indiscriminate. Good garden soil is a rich mould, so is a compost of loam and vegetable or animal manures. We cannot detect the exact meaning of

the writers; but that we may in some degree give to mere empty sound "a local habitation and name," we shall venture to describe a soil or compost, which, in our opinion, may merit the name of *rich mould*, and be found suitable to the purpose of the gardener in pot culture. Let one part (say a handful) of pure maiden loam, or the earth of decayed couch, harrowed from a loamy field, be thoroughly blended with equal quantities of the soil from decayed leaves of two years old, and perfectly reduced horse or sheep dung; let these be turned three or four times during the winter months, and they will form a uniform homogeneous mass; the practised gardener will readily render this compost more or less light by the additions of a little more loam, or of pure silver sand.

In our future articles upon the propagation of plants, we propose to abide by the opinions which are expressed above, and always to employ those terms that we recommend to others; thus we shall have made the attempt at least to remove difficulties, and to introduce simplicity and uniformity of expression, for nothing tends more directly to confuse and mislead than the adoption of words, which, to say the best of them, convey a doubtful meaning. — *Paxton's Mag.*

Art. IV. — *Description of some New and Valuable Varieties of Fruits.* Communicated by William Kenrick.

The following are the descriptions of the new varieties of Pears which were sent to Paris by Professor Van Mons of Louvain. With the exception only of the two first, I have extracted them from a very recent work, lately sent me from France, and from that city, by the celebrated author, M. Poiteau, entitled "*Theorie Van Mons.*" Nearly all the descriptions which I now shall offer are new, and have never been seen in our country before. A good proportion of the fruits here described have preceded the descriptions, having been sent to America during the last two years. W. K.

Wilhelmine. Forme of the Doyenné, skin pointed with gray in the shade — laved with red next the sun — flesh yellowish white, beurre — juice abundant, sugary, perfumed. Feb. and March. — *Bon Jardinier for* 1836.

Fortune'e. The fruit is large, roundish, flesh beurre, melting,

delicious. This fruit keeps till July, and is the best of all pears, according to M. Parmentier of Enghien, who has originated this fruit or brought it into notice. — *Bon Jardinier for* 1836.

Doyenne' d'Ete', V. M. The tree does not resemble that of our Doyennes. It owes its name to the form of its fruit, which is turbinate, and two inches in height; the eye is small, stalk thick, short and fleshy at its insertion; skin clear yellow, shining, marked with small red points in the shade, and sometimes slightly washed and spotted with red next the sun; the flesh white, melting; the juice very abundant, sugary, slightly acid and good; ripe, end of July and beginning of August, and the best pear of the season.

Marie Louise Nova, V. M. Originated by Van Mons in 1821 or 1822. The form obtusely conical, swoln towards the base, the height three inches; the skin speckled and spotted with red, and slightly washed with red next the sun, changing from green to clear yellow at maturity; flesh white, melting; juice abundant, saccharine, high flavored. This very fine fruit ripens early in Sept.

M. Poiteau who by permission of Van Mons was authorized to affix a name to some of the unnamed kinds which were sent to him at Paris, has renamed this fruit *Van Donkelaar*, which name I omit, as Van Mons had previously bestowed the same name upon another fruit. M. Poiteau seemed also aware of this circumstance. I retain only the original. Fears had been entertained by him, lest this name should be confounded with the Marie Louise of former years.

Beurre Witzhumb, V. M. Originated in 1811. Very beautiful, oblong, obtuse; the height three inches and an half, by three inches in its transverse diameter; the eye middling large, a little sunken; the skin covered with small points and spots or stains of red, becomes of a beautiful yellow at maturity; the flesh is very white, like our Doyenné; apparently, its season when mature is soon past, since we were unable to seize on the suitable time properly to judge of its merits; but, judging from the name of the celebrated amateur which M. Van Mons has affixed to this fruit, we must believe it to be naturally excellent. This magnificent fruit ripens in the former part of Sept.

Sur-reine. Originated by M. Van Mons in 1828. The fruit is oval, swoln or turbinate, two inches and a half in height, the same in its transverse diameter; the stalk an inch in length, and fleshy at its insertion; the eye slightly sunk in a regular cavity; the skin pointed with red, becoming of a clear yellow at maturity; flesh white,

fine, melting; juice abundant, saccharine, agreeable. The period of ripening is the beginning of September. The name would indicate a fruit of pre-eminent good quality.

Ferdinand de Meester. Originated by M. Van Mons in 1822. Fruit oval, swoln, height two inches and an half, diameter the same; the stalk six to eight lines; the eye large, in a knobby cavity; the skin pointed and marbled with red, stained or streaked with red next the sun, and changing to yellow at maturity; flesh white or yellowish white, half melting, slightly granulous; juice abundant, saccharine, high flavored, excellent. Ripe early in September. This fruit, which deserves to be multiplied extensively, bears the name of the gardener of M. Van Mons. It has the flavor of the Messire Jean, but its melting flesh renders it very superior.

Fondante Spence. Originated by M. Van Mons in 1816. The fruit is very large, irregular, swoln, obtusely formed at summit and base; the height nearly four inches by three in its transverse diameter; the stalk inserted in a cavity; the eye of medium size; skin a beautiful yellow with specks of red, and washed or streaked with red next the sun; flesh white, fine, melting or beurre; juice abundant, sugary, highly flavored and excellent. This excellent and very large pear ripens in the beginning of Sept. and deserves to be extensively multiplied.

Saint Germain Van Mons. Originated in 1819, in the garden of the Comte D'Arenberg, from a seedling tree sent him by M. Van Mons. Fruit not quite so long as the common St Germain; height two inches and a half; stalk equally as large, green, and fifteen or seventeen lines in length; skin of a beautiful yellow, pointed and touched with small spots of red; flesh white, slightly tinged with yellow, melting, slightly granulous; juice abundant, sugary, good. Ripe the beginning of Sept. A very excellent fruit.

Claire. Originated by M. Van Mons in 1824. Fruit turbinate, swoln; the height two inches and three-fourths, the diameter nearly the same; stalk large, eight lines in length; the eyes small, in a slight cavity; the skin clear yellow, touched with points of red, and washed with bright red next the sun, in which points of green surrounded with yellow, are interspersed; flesh white, fine, melting; juice very abundant, saccharine, high flavored and excellent. This very superior pear ripens the beginning of September.

Imperatrice de France. Originated by Van Mons in 1809. The fruit is nearly conical, a little swoln; height two inches and a

half; stalk fifteen lines, obliquely inserted; the eye in a narrow cavity; skin a beautiful yellow, very finely marked with red, and touched with spots of the same color; flesh white, melting; juice abundant, sugary, high flavored, delicious. This excellent pear ripens the beginning of September. This pear is considered to be a synonyme of *La Belle de Flanders* or *Flemish Beauty* of the English, or *Le Brilliant.*

Louise de Prusse (550, V. M.) Originated in 1826. Size and form of the St Germain: little swoln and not so thick near the stalk, which is obliquely inserted; eye equally large, in a slight and regular cavity; skin green, a little rough, slightly pointed with red and yellow at maturity; juice abundant, saccharine, agreeable. Ripe the commencement of September.

Frederic de Wurtemberg. Originated by Van Mons in 1812 or 1813. Fruit swoln towards the middle of its height, which is three inches and a fourth, and nearly three inches in its transverse diameter; conical towards the stalk, which is thick towards the base, and an inch long; eye large; skin smooth, somewhat marbled or pointed with red, becoming of a beautiful bright red next the sun, and changing to yellow at maturity in the shade; flesh very white, fine, beurre; juice abundant, sugary, delicious. Ripe the end of September and beginning of October.

This fine fruit, which Dr Van Mons has lately sent to America, is evidently the same fruit which was formerly sent to Mr Lowell by Mr Knight, as the *Capiaumont.* Judging by the habits of the tree, and the peculiarity of its leaf and wood and growth, all circumstances combined, we are perfectly satisfied that the fruit described in the Pomological Magazine as the *Capiaumont*, which is evidently identical with that which was heretofore known by the same name with us, is no other than the Frederic de Wurtemberg. Lately we have also received from the London Hort. Soc. and from Dr Van Mons, another kind as the *true Capiaumont;* both specimens being in agreement. Both kinds we have also received from other sources. Mr De Wael fully confirms all I have now stated.

Grosse Calebasse, V. M. This is without a doubt the same fruit which Dr Van Mons has lately sent to America as the *Calebasse Monstreuse.* The fruit, which is wonderful for its length, is in form of a conical calabash; height five inches and an half, and three inches and an half in its transverse diameter, which is greatest near the base; stalk large, eight or ten lines in length; eye of middle size

for a fruit so large, round, its divisions large and diverging; skin smooth, rather shining, of a bright green, changing to yellow at maturity, and covered for the most part with grizly red next the sun, and marbled or spotted with the same color in the shade; flesh white and moderately fine grained, melting; juice very abundant, sugary, sufficiently high flavored. Although not highly perfumed, the quality is good; and the Horticultural Society of Paris have also decided that the quality of the fruit is very good, a recommendation, independent of its very extraordinary form and size.

(To be continued.)

ART. V. — *On Plants which are peculiarly adapted for planting in Beds in Masses; each kind being showy and profuse in Flowering.* By FLORA.

Eschscholtzia californica, yellow. — Grows two feet high; blooms from June to September. The seed should be sown in pots in spring, and placed in a hotbed; when the plants are large enough, they may be transplanted into a bed of rich deep soil, where they will begin to bloom about the first of July; they will endure the cold of winter very well, if planted in a bed that has a dry substratum, or if the bed be raised a few inches higher than the surrounding ground. It is essential to their endurance of winter, that the roots have a dry soil. The plants will bloom still more freely the second year. If required, they may be parted at the roots, and an increase of plants be easily obtained; and by this means they may be perpetuated from year to year. The time when I divide them is about the first week in April. Scarcely any plant produces a greater degree of splendor than this: when the full sun is upon it, it makes a complete blaze of color. It is a most suitable plant for producing a distant effect. When it is planted out in a bed, it requires a considerable number of sticks for support, or the weak branches will be liable to lie close to the ground, and then the bloom is not so fine. If planted in single patches, they should have several sticks placed round, and a string fastened, so as to keep the flower-stalks tolerably erect; by this attention a neat and handsome effect will be given. I adopt the use of cross strings, as well as a circular one, by which means I have the shoots *regularly* disposed.

Calandrinia grandiflora. — Grows two feet high; bloom from June to October. The seed should be sown in pots early in spring, and placed in a hotbed. When the plants are large enough to transplant, they should be planted off into small-sized pots, which should be well drained with potsherds, as this plant is very susceptible of injury from damp. The soil should be a rich loam, with a portion of sand; it should not be sifted fine, but be well broken with the spade. The plants should be placed in a frame, or other situation where they can be forwarded. About the first week in May, a bed of rich soil, mixed with sand, should be prepared. Care must be taken to have the bed elevated, so that the surface be four or six inches above the level of the adjoining ground; and the surface should be slightly rounded, so as to allow any excess of water, from heavy showers, to pass away. Unless this precaution be attended to, the plants will most probably perish, unless an awning of canvas covering be used to prevent it. The plants should be turned out of the pots with balls entire, and placed a foot or more apart. If it be wished that their flower-stems should rise to their highest extent, (viz. two feet,) they may be placed a foot apart; but when it is desired to keep them lower, they should be planted more distant, in proportion to their prostration. The plant is very well adapted for covering a bed only a few inches high, the branches naturally inclining to grow horizontally, or even pendulous. Considerable care is required to keep them well secured, by tying, &c., in consequence of the shoots being succulent, and very brittle. When watering is required, none should be given to the heart of the plant, but it should be poured over the surface of the bed. To provide against accidents that may arise, it is advisable to have a few plants kept in pots, in order to replace deficiencies. If a bed is required to bloom profusely at a late period of the summer, or even in autumn, seed should be sown at the end of May, or early in June, and the plants treated in every respect as above directed. The plant produces seeds in abundance, but it requires some attention to get it before the capsule bursts. The plants may be taken up and preserved during winter in a cool, dry frame. In spring, they may be increased by picking off the leading shoots, thereby causing the production of laterals, which being carefully taken off, may be struck; or the main stem, down to the root, may be divided, so as to have a shoot to each part. To get them to strike well, a hotbed frame, or stove heat, will be found useful. When the fine rosy lilac flowers of this very beautiful plant are fully expanded, being produced in vast profusion, and

continuing for so long a season, they make a very pleasing appearance, and never fail to give ample satisfaction.

Nierembergia phœnicea. Syn. Petunia violacea.—This plant is one of the most valuable additions to the flower garden, and with which all admirers of flowers must be pleased. It will bloom constantly in the open border from May to the end of October; and the fine rosy purple flowers being produced in vast profusion, render the plant a most pleasing object. When allowed to grow upright, and carefully trained, it will rise to six or eight feet high, or even more, and be liberally furnished with lengthened lateral branches. The plant is readily raised by seed, which should be sown in a pot early in spring, and placed in a hotbed frame. When strong enough, the plants should be transplanted into small pots, using a rich soil; and by the end of May, they may be planted out in the open border. Such plants will rarely rise higher than three feet the first season, but will produce a vast number of side shoots, and bloom abundantly. At the end of October, the old plants, if taken up with care, may be kept in a greenhouse through winter. About the end of September, slips should be taken off, and struck in heat, which they do very freely; ten or twenty may be inserted in a pot, and after having taken root, they may be kept in a cool greenhouse, frame, or any similar situation, during winter. If large plants are desired, some of the cuttings should be potted off at the end of February, using a rich loamy soil, and well draining the pots. Each plant should have a stick, to which it should be neatly tied, keeping a principal leading shoot. These plants, when properly attended to, in repotting as soon as required, and in training erect, will, if kept in a greenhouse, reach three or four feet high by the end of May; and if then planted out, will reach six feet, or more, by the end of summer. Old plants, that have survived the winter as above directed, if turned out, will be proportionably fine. A bed of this plant looks well, when the plants are so ranged as to form a cone; or, indeed, in any shape in which the middle of the bed is the highest, gradually lowering to the edges. The plant is admirably well adapted for pegging down to the ground, the lateral shoots rising from six inches to a foot high. The leading shoots being prostrate, checks luxuriance, and causes abundance of bloom. Cuttings taken off in autumn are very suitable for this purpose: they readily bend to the direction desired. Care is required to have a number of shorts sticks pricked in the bed, to which the shoots, in the early part of the season, must be tied, being very brittle;

subsequently, however, when there is an abundance of shoots, no tying will be required, but the sticks are necessary, in order to prevent strong winds from blowing the plants out of proper form. This plant is also admirably well adapted for training against a wall, or for covering a fence during summer: of course proportionably sized plants must be used to suit the purposes. The flower of the original species has a dark-colored tube, but a variety has been raised with a lilac tube: the former is now commonly called *N. phœnicea*, and the latter *N. phœnicea var. pallida.*

Malope grandiflorum. Monadelphia, Polyandria. Malvaceæ. This very showy plant is of the Mallow tribe; grows two feet to two feet six inches high. The flowers are produced in great abundance, and being of a fine rosy crimson, make a very gay appearance, rendering it a desirable plant for giving a distant attracting effect. It blooms from June to the end of October, unless cut off by frost. Seed should be sown in pots, early in March, and be raised in a hotbed; or may be sown upon a hotbed, under a frame or hand-glass. The plants may be set out in the open border by the middle of May. I find it best to raise them in pots, as I can divide the plants without injury to the roots, and thus retain all the fibrous ones; this is essential for their striking again. Plants that are raised upon a hotbed, and have the privilege of extending their roots to any desirable length, run to a great extent. The fibrous roots being very distant from the stem of the plant, are, in taking up, generally broken off, and it is difficult to get the plants to grow again; if they survive at all, they are generally very weakly: so that, if raised on a hotbed, great care must be given to get all the fibrous roots. The plant blooms most profusely in a good loamy soil, mixed with a little manure or leaf-mould If the soil be very rich, the plant will be liable to grow too vigorously, and produce a vast profusion of foliage, which will rather conceal the flowers; but if moderately enriched, it will produce one mass of bloom. I find it profitable to give all my flower-beds an addition of fresh soil every winter, generally adding about two or three inches deep. If the Malope grandiflora is not desired to come into bloom *before the beginning of August*, the seed may be sown in March, in the open border where it is desired the plants shall blossom. The plant produces seed in abundance, which ripens well from plants that bloom early in the summer.

Bouvardia triphylla. Tetrandria, Monogynia. Rubiaceæ. There are three varieties of this species, viz. Jacquini, glabra, and pubes-

cens, all of which kinds are very handsome flowering plants. The flowers are of a fine scarlet, and in shape like the Trumpet Honeysuckle, and the blossoms are produced in clusters of from six to twenty in each head; and some plants which I have a bed of, produced this season thirtyfive clusters or heads of flowers upon each. The plant is a native of Mexico, and is usually kept in the greenhouse in this country, but I am of opinion that it may be found as hardy as the old Fuchsia coccinea, and stand our winters in this part of the world. It will, however, be necessary to have it planted where it will have a very dry subsoil, and likewise to have protection, in winter over the roots, by means of leaves, tan, or something of this nature. I purpose trying my bed of plants the coming winter, and the result shall be forwarded you next summer. I have employed this plant for a bed for the last three years, and purchased in the first instance, two dozen plants at 1s. 8d. each. I had previously grown this plant, from which I propagated young ones with facility, but I found that it required two or three years' growth before they become bushy enough to make show fit for a bed. I therefore, resolved on getting fine plants calculated to answer the purpose at once; and these I obtained of a Nurseryman, at the above named reasonable charge. The same plants will successively answer for the length of an age, and in each season increase in size and beauty. The plan I adopt in the culture of this plant is the following: — The soil of the bed is composed of good rich loam, well manured with rotten leaves, a portion of old hotbed dung, and charcoal dust, with an addition of river sand. Previous to laying in the compost, I had the bottom of the bed covered to the depth of three inches with some small gravel stones, upon which I had the compost about eight inches deep, the surface being raised above the walk and grass verge, four inches. On or about the twentieth of May each year, I turned out the plants with balls entire, except a careful loosening of the outer fibres. I placed them in the bed, a round one, the tallest in the centre, and lowest at the outer row, and so close that the plants furnish a covering to the bed, and when in bloom appear a mass of flowers. I place the plant so low in the soil that the top of the ball is about an inch below the surface of the bed. After planting and before watering, I placed from four to six sticks round each, and to them secured the branches — then water them freely. The watering was repeated frequently during the summer season, more particularly the present one, and the plants have most amply repaid for the attention, nothing exceeding the delicate

splendid appearance of the flowers, and which continue from June to October. The plant in the greenhouse attains the height of two feet or upwards, but in the open bed it does not exceed more than eighteen inches (generally twelve); the plant being allowed to root or spread without obstruction, becomes bushy instead of being drawn up weakly. About the middle of October, I usually take up the plants from the bed, and repot them into the same kind of soil, well draining the pots, and being careful to have fine soil to shake in among the fibrous roots. I have also kept the plants through winter by having them planted in a Mignonette box, closely together. In both instances, I kept them in winter in a cool frame, sunk below the surface of the surrounding ground, in which for the last two winters they have kept well. Cuttings strike freely in loam and sand, placed in a hotbed frame. Suckers are readily obtained, many of them rooted, which grow readily.

Senecio elegans, Ragwort, or Double Groundsel. Syngenesia, Superflua. Jacobeæ. There are four kinds of this plant, viz. double red, double crimson, double white, and double flesh-colored. Each of these kinds will make a most handsome bed. The plant is very pretty in its foliage, grows freely, and most profusely; scarcely any thing surpassing it for a neat and handsome show. It will grow about 18 inches high, and continue in bloom from June to the end of the season. The soil I grow it in very successfully is fresh loam mixed with leaf mould, and about eight inches deep, upon a dry subsoil. I find that when the soil is much enriched, the plant has a tendency to produce too much foliage; but, grown in turf, loam, &c., as above stated, an amazing production of bloom is the result. The plant is readily increased by slips, scarcely one in a hundred failing to grow. I raise them in pots, or under hand glasses, in fine sifted loam. They require winter protection in a dry, cool frame, or green-house. I usually take off slips in September, and keep them in the cutting-pots till March, then separate them, and pot into small pots. I turn them out entire, about the middle of May, into the beds.

(To be continued.)

Art. VI. — *Culture of Strawberries.*

As the time is now approaching, when those who intend to form beds for raising this cheap and delicious fruit, should make the necessary preparations, a few brief instructions on the subject may not be unacceptable.

Varieties. — The following are a few of those which rank among the best and most desirable varieties. Austrian Scarlet, or Duke of Kent; Grove End Scarlet; Roseberry; Keen's Seedling; Methven; Old Pine; Red and White Alpine; Bush Alpine. The Austrian Scarlet is the earliest of known varieties, and is also of excellent flavor. The red and white Alpine possess the advantage of ripening, when properly managed, through autumn till winter; we have seen a dish of good fruit, picked on the first day of December. The bush Alpine possesses the same advantage, and the additional one of not spreading by runners; it is not, however, a first rate bearer, nor is the fruit of the very best quality.

Propagation. — With the exception of the bush Alpine, which is only increased by divisions of the root, all the varieties multiply spontaneously every season, by numerous runners from the parent plant, which, rooting and forming a plant at every joint, only require, for the production of fruit in abundance, removal to a bed where they may have room to flourish. Such plants will bear the summer succeeding the planting, and in the second year will be in full perfection. The best way is to supply a new plantation, with plants which have been taken from runners and set out in nursery beds the previous season. But where such cannot be had, those of the present season will answer.

Soil and situation. — Strawberries will grow and produce fruit on almost any soil of moderate fertility; but they are most productive on a deep rich loam. They should be in an open situation, exposed to the sun and air, and not under trees. The Alpine strawberries, however, admit of being placed in a more shady situation, as it is during the hot and dry season of the year that they are intended for bearing; which they will not do if allowed to suffer from drought; and few are willing to take the pains to water them as much as they would require.

Transplanting. — The best time for doing this is in the spring; but if performed with proper care, they succeed nearly if not quite as well when transplanted early in autumn, say in the early part of

September. The ground should be well manured and dug, a month before transplanting. The chief care required when the work is done in autumn, is to guard against the plants being thrown out by frost, which is best effected by treading the soil closely about the roots.

Culture. — The distance of the plants asunder, where the soil is rendered *sufficiently fertile*, should be, for the larger varieties (such as Methven and Keen's seedling,) twenty inches from row to row and fifteen inches in the row; the smaller varieties may be a little nearer together. This distance may seem too great, but it is much better than crowding the plants too closely, which is the more common error. It is only by affording sufficient room for the plants to receive the benefit of sun, air, and of culture, that the fruit will ripen early, and acquire a good size and agreeable flavor. Keen, of Isleworth in England, a most successful cultivator of this fruit, and who raised the celebrated Keen's seedling, says, in speaking of the large distances he adopted in planting, — "these distances I find necessary, for the *trusses of fruit* in my garden ground are frequently *a foot long*." The following is his method of culture, in his own words: "After the beds are planted, I always keep them as clear of weeds as possible, and on no account allow any crop to be planted between the rows. Upon the growing of the runners, I have them cut, when necessary; this is usually three times in each season.* In autumn I always have the rows dug between; for I find it refreshes the plants materially; and I recommend to those persons to whom it may be convenient, to scatter in the spring, very lightly, some loose straw or long dung between the rows. It serves to keep the ground moist, enriches the strawberry, and forms a clean bed for the trusses of fruit to lie on; and thus, by a little extra trouble and cost, a more abundant crop may be obtained. A short time before the fruit ripens, I always cut off the runners, to strengthen the root; and after the fruit is gathered, I have what fresh runners have been made taken off with

* Lindley says, in speaking of the Alpine strawberries, "If the runners are planted out in August or the beginning of September, the beds will be covered with runners by spring; these should not be removed as directed for the other classes, because the first and strongest of them will produce fruit during the autumn, and continue in succession to a late period of the season. But a succession of finer fruit than these is produced by cutting off all the flower stems as soon as they begin to blossom, from their commencement in spring till the end of June. By this means a most abundant supply of the very finest fruit is produced from the end of July till frost sets in."

a reaping-hook, together with the outside leaves around the main plant, after which I rake the beds, then hoe them, and rake them again. In the autumn, unless the plants appear very strong, I have some dung dug in between the rows, but if they are very luxuriant the dung is not required; for in some rich soils it would cause the plants to turn nearly all to leaf. I also have to remark, that the dung used for manure should not be too far spent; fresh dung from the stable door, is preferable to spit-dung, which many persons are so fond of."

In thus recommending a thorough method of culture, we would by no means wish to discourage those who have not yet attempted raising this excellent fruit, and who think they cannot afford to adopt such culture, from attempting it altogether; indeed, if proper varieties are obtained, good crops may be had with little or no care after transplanting; we have known beds almost untouched for years to yield plentifully. Nevertheless, we consider the *cheapest* method, ultimately, of raising this fruit, is by thorough culture; that the greatest amount of fruit is obtained in this way for the care and labor expended, and that the quality is so much superior to that obtained from slight culture, as to give the former practice very decided advantages.

When the beds have much diminished in their product, new plantations must be made to supply their place. This generally takes place in four or five years. — *Genesee Farmer.*

ART. VII. — *Notices of Heating by Hot Water.* By the CONDUCTOR.

THE American Gardener's Magazine for July, 1836, contains "*a Descriptive Notice of Mr Hogg's new Method of Heating by Hot Water.* By A. J. Downing, Botanic Garden and Nursery, Newark, N. Y." It consists of a strong, iron-bound wooden cask, air tight, except through the tubes in which the hot water is circulated. This cask contains the furnace, and serves as the boiler. Within the boiler is a conical cast-iron furnace for burning anthracite coal, with a grate and ash pit below as usual.

"The great improvement," it is stated in the article alluded to, "in the present apparatus consists in placing the furnace *in the midst*

of the body of water, which completely surrounds it," &c. It is stated also that the apparatus has been tried with success, and added, "We believe Mr Hogg, Junior, is about patenting his excellent invention, and we cannot refrain from expressing our conviction that it will (jointly with other systems for heating by hot water), in a measure, if not entirely, supersede the common brick flues, so drying to the atmosphere of plant-houses, and so deleterious in the escaping smoke to the plant themselves."

There is ingenuity and plausibility in Mr Hogg's invention, but with regard to its novelty and the utility of surrounding the furnace with water in contact with the metal, we have some doubts. Tredgold, an eminent English engineer, in "*A Treatise on Warming and Ventilating Rooms*," page 121,* has the following passages: "Some have imagined a great effect would be gained by having the fire within the boiler. It is a very old scheme (see Birch's History Royal Society, vol. 1, p. 173.) Smeaton adopted it in his experimental engine, Reports, vol. 1, p. 225, and Trevithwick for his high pressure engine. But the plan is not so good as might be supposed, because the generation of steam takes the heat too rapidly from the fuel for perfect combustion to take place."

In order to burn anthracite to advantage, it is necessary to give it a very hot fire bed, which cannot be obtained if the pot or vessel in which the coal is placed for combustion is surrounded by water; for hot water will not only put out fire, but cool red hot iron to many degrees below a red heat.

Art. VIII. — *Massachusetts Horticultural Society.*

Saturday, July 30, 1836.

The following Report was made by the President of the Society.

I have the pleasure to lay before the Society two communications from M. Emilien de Wael. This gentleman, it will be recollected, was the bearer of letters to the Society from Dr Van Mons and M. A. Poiteau, accompanying a donation of books, received a short time since. Mr de Wael is an amateur cultivator, and the Secretary of the Horticultural Society of Antwerp; he is now on a tour of the

* This work is in the Boston Atheneum.

United States for scientific purposes, connected with Entomology and the examination of the marine plants of our country, and I have to congratulate the Society on the addition to its list of corresponding members of the name of an individual who is not only qualified, but who is entirely disposed to subserve its purposes at Antwerp, located as he is, in a country to which Horticulture, so far as *pomology* is concerned, is indebted for more numerous and valuable acquisitions, than to any other.

Mr de Wael's remarks on the results of various experiments made in Belgium to protect the Morus Multicaulis from the effects of cold must be interesting to those who are endeavoring to protect that plant from the severity of our own winters; it is desirable to know what is now considered the best method of cultivating it in other countries; for it is by a careful collation of facts, connected with its culture abroad in aid of the actual experiments making here, that we may hope shortly to overcome every obstacle to the extensive cultivation of that invaluable plant.

Respectfully submitted by

ELIJAH VOSE, *Pres. Mass. Hort. Soc.*

BOSTON, JULY 25, 1836.

Since I have been in this country I have heard of several complaints, chiefly from the Hartford Mulberry tree planters, of the difficulty experienced the last two years in making the *Morus Multicaulis* stand your winters well.

This kind of mulberry is easily acclimated if a proper mode of culture be adopted in the places where it is planted.

In Belgium, the winters, notwithstanding they are not so severe as yours, often give us great trouble, and the influence of the cold was repeatedly experienced on these Mulberries, which were often killed down to the roots.

The late *J. Le Candele* of Humbeck, near Brussells, suggested the idea of having different modes of experiment adopted in distant places. And the one which proved most efficient, was to cut down yearly, the Morus Multicaulis, in the same manner as is done with willows in a *Salictum*, that is to say, at a few inches above the soil, and to cover the remaining trunk with dead leaves; in three or four years, the roots being stout enough, they did not require any more covering. From the buds preserved on the plants, fine and hardy shoots came forth, giving larger and more lively leaves to feed the silk worms upon.

It has been since stated to me in a letter from Batavia, (island of Java,) that this mode of culture is much in use near Manilla and in China, not on account of the cold, but in order to keep the Morus in a shrubby state, which affords greater facility for gathering the leaves in the season when desired. There the mulberry seems to be planted in fields as Indian corn is here, — in the fall of the year the plants are deprived of their branches, the number of which is continually increasing, and growing in one season from five to eight feet — which growth is fully equalled by our own. I would advise a similar experiment in this State; it might, perhaps, answer well.

Most respectfully, your ob't servant,

EMILIEN DE WAEL.

To Hon. Elijah Vose, *Pres. Mass. Hort. Society.*

A communication was also received from M. Soulange Bodin, of the garden at Fromont.

EXHIBITION OF FRUITS.

Pears, by Mr Downer — A branch loaded with Petit Muscat pears, an early but on other accounts not a very desirable variety.

Gooseberries, by Mr Walker — Roaring Lion, Hopley's Globe, Crown Bob, Viper, Lancaster Lad, Golden Lion, Whitesmith, Bank of England, and a Seedling of a dark green color — all fine specimens.

By John Hovey, Roxbury — Whitesmith, Princess Royal, Hopley's Globe and Red Lion — large and fine.

By Mr J. L. L. F. Warren, Brighton — Roaring Lion, very large.

Currants, by Mr Walker — A specimen of a Red Seedling of fine promise, the foliage very large and of a deep green color, with long clusters of fruit — the berries of good size.

Melons and Squashes — Two Musk Melons and one Squash, were exhibited by Mr Warren.

For the Committee,

E. M. RICHARDS.

Saturday, Aug. 13.

The contributors were Messrs Wilder, Breck, Mason, Winship, Sweetser and S. Walker.

Among the new things was a seedling Dahlia from Messrs Hovey, raised from seed of the Lord Liverpool, resembling a good specimen of Barrett's Susannah. Mr Breck, a very large and very double seed-

ling. Mr Breck has about two hundred seedlings which he expects will bloom this season.

By Mr Thomas Mason — a fine bouquet.

By Mr E. A. Story, from Messrs Winship — A large collection of herbaceous, and other flowers.

From Mr Dennis Murphy — Dahlia, var., anemoneflora rosea.

By Col. M. P. Wilder — Dahlias, var., (beautiful) Metropolitan, Calypso, Inwood's Ariel, Dennissi Coccinnea, Levick's Shannon, fine, Cedo Nulli, fine, Dennis' Queen of Whites, Wells' Paragon, Belladonna, British Queen, Erecta, superb color, Dutchess of Bedford, extra fine scarlet.

By Mr Samuel Sweetser—Dahlias, var., King of Yellows, (Brewer's) Dennissi, Coccinnea, Laura, Lady Sefton, Purple Globe, Lady Campbell, Foster's Premier, Othello, fine, Granta, Lass of Richmond Hill, Chancellor, Yellow Turban, King of Whites, Cassina, Crimson Globe, Queen Dahlias, Belladonna, Marchioness Lothain, Duchess of Bedford. Some of the above were extra fine flowers.

From Hovey & Co. — Andromeda, Amanda, Agrippina, Rubricunda formosa, Dutchess of Bedford, Emperor of the Yellows, Sulphurea perfecta, Beauty of Sheffield, Albion, Jaune Insurmountable, Barrett's Susannah, fine, Springfield Rival, splendid specimens, Paragon of Perfection, Lord Liverpool, Widnall's Rising Sun, do. Perfection, do. Enchanter, Brewer's Rival King, Lord Liverpool seedling, fine.

By Samuel Walker — Dahlias, var., Groombridge's Matchless, Fanny Kemble, Queen of Belgium, Atropurpurea, Globe flowering, with bouquets.

For the Committee,

S. WALKER.

SATURDAY, Aug. 20.

The display of Flowers was very fine to-day; our tables were crowded with Dahlias and other pretty things from Mr William E. Carter of the Botanic Garden, Cambridge, Messrs Hovey of Boston, Mr S. Sweetser of Cambridgeport, Mr O. Everett, Jr. of Boston, Mr Johnson and Mr Mason of Charlestown, and Samuel Walker of Roxbury.

Among the seedlings this day presented, we noticed two Dahlias by Mr Mason, one called "Bunker Hill" and the other the "British Crown"; we shall say nothing about either of these until we see further specimens.

The seedling Lobelia cardinalis var. alba, by Mr Carter, we would recommend to the attention of our friends and the lovers of new and pretty things. We understood Mr C. to say that a plant of the L. cardinalis var. alba, was brought to the Botanic garden, Cambridge, some few years ago, which was propagated and sent out to applicants as often as a duplicate plant could be obtained, and so great was Mr Carter's desire to accommodate and gratify the admirers of Flora with a plant of his "new comer" that he left himself with so small a plant, or rather with a piece of a plant, that it died, notwithstanding it was under his care.

Mr C. consoled himself for the loss of his favorite, as he had saved some seeds, which he had recourse to, and fully expected to be able to renew the variety in his own garden, but in this he has for years been doomed to disappointment. The plants from year to year have showed some of the original properties of the mother plant, viz. — the stems and leaves of the plants were of a much lighter color than the common var. of L. cardinalis. We mention these facts that others may hope with perseverance like that of Mr Carter to be successful.

Mr Carter also presented three new seedling varieties of Phlox, which with only one exception we consider are equal if not superior to anything in this country. Magnolia grandiflora, Hedychium gardenarium, Dahlias var., Teucer, Augusta, Miss Pelham, Daphne, Amanda, Le Brilliant, Queen of Dahlias, fine Paphilia, William IV., Atropurpurea, Queen of Wirtemburg, seedling of Wirtemburg.

From O. Everett, Jr. Boston — Dahlias var., Rose d'Amour, Daniel O'Connell, Levick's Commander in Chief, Agrippina, Shannon.

From Mr Johnson — Dahlias var., Granta, Angeline, Harris's fulginus.

From Mr S. Sweetser — Dahlias var., Lovely's Earl Grey, Lady Sefton, Granta, Foster's Premier, large and fine, Calypso, Lady Grey, King of Yellows, Dennis' Queen of the Whites, Jason, Negro Boy, Springfield rival, King of the Whites, Paragon of Perfection, Duke of Devonshire, Countess of Liverpool, Emperor of the Yellows, Widnall's flora, do. Phillis, do. Chancellor.

From Mr Mason — Dahlias var., Transcendant, King of the Yellows, Springfield Rival, Countess of Liverpool, King of the Whites, Bonny Dee, White tea-sented rose, Viola purpurea and alba, Carnations, &c. &c.

By Messrs Hovey & Co. — Dahlias, var. Hermione, very fine, Cedo

Nulli, Lord Liverpool, very fine, Rose d'Amour, Belladonna, Lady Sefton, Amanda, fine, Agrippina, good, Queen of Dahlias, Paragon of Perfection, Springfield rival, extra, Queen Bess, Coronet, Jupiter, Negro Boy, Countess of Liverpool, extra, Dennissi, very fine, Rosea Alba, La Inapproachable, Widnall's Clio, do. Queen of roses, do. Virginia, do. Perfection, do. Rising Sun, fine, do. Enchanter.

From Samuel Walker — Dahlias var., Lord Liverpool, Globe, flowering, Agrippina, Brown's Ophelia and Le Brilliant, Viola seedling.

For the Committee,

S. WALKER, *Chairman.*

SATURDAY, Aug. 13.

Pears, by Mr Manning — Madeliene of the Pom. Mag., also Beauty of Summer of Cox.

Plums, by John Warren of Weston — Warren's seedling Plums, an oblong dark blue or purple fruit, of medium size, valuable for its early maturity.

Raspberries, by Thomas Mason of the Charlestown vineyard — Mason's seedling, which has been more particularly described in the former exhibitions.

For the Committee,

WILLIAM KENRICK.

SATURDAY, Aug. 20.

Pears, by Mr Manning—Rousselet Hatif of Coxe, an excellent early fruit, of a fine musky flavor, and very productive; Fine Gold of summer, two specimens, one from a very vigorous tree in cultivated ground; Green Chissel; also the Robine, or August Muscat as received by him; a small, pale, musky, breaking fruit, not recommended; another fruit, name unknown, handsome.

By Mr Downer — Fine Gold of Summer; another fruit name unknown, pleasant and astringent; also the Bloodgood Pear, a fruit of middle size, oblong, of a rusty color, not handsome, but a fine flavored early fruit.

Apples, by Mr Downer — Sopsavine, also Juneating, so called, a middle sized, green colored fruit, of a flattened form, much resembling the Early Harvest, but of evidently superior as a dessert fruit.

Plums, by Mr Bartlett — Italian Damask, very fine, large, handsome and productive.

By Mr Downer — A small early fruit, very sweet and good, a productive kind.

Apricots, handsome specimens, believed to be from the Messrs Hovey.

Grapes. Handsome ripe specimens, both of Black Hamburg and Chasselas, by Mr Mason of the Charlestown vineyard.

For the Committee, WILLIAM KENRICK.

SATURDAY, Aug. 27.

Pears, by Mr Manning — Skinless, or Sans Peau, a small, productive, fine old fruit; Summer Melting, a fruit so called, the original name being lost; a good sized fruit, but somewhat mealy; another fruit which was received from Burlington, N. J., as the Bellissime d'Eté, an old and very indifferent fruit, compared with many others of modern date.

Apples, by Mr Vose, President of the Society — Early Red Juneating, also Shropshirevine or Sops-of-wine and Early Harvest, all handsome.

By Mr Richards — Red Juneating, Curtis' Early Striped, Shropshirevine or Sops-of-wine, Early Harvest, and a kind without name, a small, pleasant, striped fruit; also Early Bow, a fine, large, well known, sweet fruit.

By James Eustis of South Reading — The Simonds Sweeting, a handsome, red, good fruit.

By Mr Manning — Red Astrachan, Calville Rouge D'Ete, Summer Rose, a handsome white fruit with a pale blush, of good flavor.

Plums, by Mr Pond — Corse's Nota Bena, Catalonian Plum, Pond's Seedling, large and handsome but not mature; Apricot Plum, ripe and very fine; Duanes Purple Plum, very large and fine.

By Mr Manning — Italian Damask, a fruit heretofore spoken of as always productive, large and excellent.

Green flesh Persian Melon, presented by Mr Haggerston, from Belmont, and the splendid conservatory of Mr Cushing. The fruit of delicious quality. The seeds of this superior melon were distributed.

For the Committee, WILLIAM KENRICK.

SATURDAY, Aug. 27.

The contributions of flowers were very large, and the specimens unusually fine. The praises bestowed by the visiters generally, on the rare specimens of plants from the conservatory of J. P. Cushing, Esq. of Watertown, are in themselves sufficient to show in what high estimation such fine flowers are held; and it is but due to Mr Haggerston, who presented the specimens, and who has the charge of Mr Cushing's garden, to state, that, the flowers spoke in a language

much more powerful and eloquent than we can do in words, that he is not only a master in his profession, but that he is a lover, an attentive lover of those beauties of nature which have been committed to his care. Several specimens presented by Mr Haggerston, were in the highest state of perfection, among which we noticed Combretum purpureum; Passiflora quadrangularis; Hibiscus rosa sinensis; Nerium oleander; do. pleno; Cerbera thereta; and a double flowering Althæa from China. Dahlia's var. Barrett's Susannah; Granta; Queen of the Dahlias (fine); Springfield rival (fine); Dennisii; Widnall's Adonis; Passiflora alba; Rose d'amour; and Harriet Martineau.

From S. Sweetser, of Cambridgeport, nineteen varieties of Dahlias.

From Col. M. P. Wilder, of Dorchester, twentyeight varieties of Dahlias.

From Hovey & Co. twentyeight varieties of Dahlias.

By Mr J. Locke, of Andover, a fine specimen of Alcea nigra.

From Mr Dennis Murphy, of Roxbury, a variety of choice flowers.

From Mr Thomas Mason, of Charlestown, a very splendid bouquet which was much admired. Dahlias, var. King of the Yellows; King of the Whites; Dennisii; Globe; Magnet; Picta formosissima; Countess of Liverpool; Bonny Dee, Transcendent; Rose Constantine, and Seedlings Bunker Hill and British Crown.

By Samuel Walker, of Roxbury. Bouquets, Violas, Dahlias, var. Lord Liverpool; Agrippina; Belladonna; Queen of the Yellows, and Globe flowering.

For the Committee.

S. WALKER, *Chairman.*

Art. IX.—*Gardener's Work for September.*

Earth up celery as it advances in growth, but be careful in all cases to avoid covering the hearts of the plants. Perform this work in a dry day, and be careful not to bruise the stalks, which would cause them to rot. Select the ripest and best seeds from such plants as are most forward and vigorous, and you will improve your *breed* of vegetables in a manner similar to that by which the breeds

of cattle are improved by the celebrated European breeders of cattle. New and improved sorts of wheat and Indian corn as well as of peas, beans, &c. &c. have been introduced, by observing among growing crops some individual stalks, pods, ears, &c. distinguishable from the rest by a greater degree of luxuriance, productiveness, earliness, or some other peculiarity, gathering and preserving them exclusively for seed till sufficiently multiplied for propagation on a large scale.

Turnip plants. The time for the first hoeing of turnips is when the leaves as they lie spread on the ground are about the size of the hand. But if the weeds are numerous and grow rapidly they should be cut or pulled out before the plants arrive to that size, lest they should be drawn up slender, and acquire a feeble and sickly habit. It is said in Loudon's Encyclopedia of Agriculture, that dusting rows of turnip plants, when they are in the seed leaf is effectual in preventing the depredations of the fly. "A bushel of quick lime," according to that work, "is sufficient to dust over an acre of drilled turnips, and a boy may be soon taught to lay it on almost as fast as he can walk along the drills. If the seminal leaves are powdered in the slightest degree it is sufficient, but should the rain wash the lime off, before the turnips are in the rough leaf it may be necessary to repeat the operation if the fly begins to make its appearance."

Pull and preserve your ripe onions. To preserve onions through the winter they may be tied together, forming what are called ropes or bunches of onions, and kept in a dry and cool cellor. Moisture rots and warmth causes them to vegetate. A considerable degree of cold will not injure them, for they resist frost in consequence of a spirituous substance of which they are in part composed. Searing their fibrous roots with a hot iron will prevent them from sprouting.

Fruit Trees. If, in looking over your orchard, you perceive any limbs overburthened with fruit, you will do well to pick off a part, or put props under the limbs, or perhaps do both. In most cases when time can be spared it will be advisable to pick off the supernumerary apples, peaches, &c. "No error," says Mr Coxe, "is more universal than an anxiety for early productiveness in an orchard. It is generally obtained at the expense of much eventual profit and of a great diminution of the size and vigor of the trees. Believing early fecundity to be injurious to the vigor and perfection of plants, I am always attentive to pluck from the trees these evidences of early maturity in the first stages of their existence."